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Takaharu Ai

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EXAMINER

BATTAGLIA, MICHAEL V

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2627

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/559,908	Applicant(s) AI, TAKAHARU	
	Examiner Michael V. Battaglia	Art Unit 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-16, 20 and 21 is/are rejected.
- 7) ☒ Claim(s) 17-19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 December 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Drawings

1. Figures 11-13 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Objections

3. Claims 14, 17-19 and 21 are objected to because of the following informalities:
- a.) Rewriting the claim to include a recognizable transitional phrase to make clear where the preamble of the claim ends and the body of the claim begins is suggested.
 - b.) On line 12 of claim 17, replacing "further comprising" with --comprising-- is suggested because "further" implies that the "device" has been positively claimed to comprise something in addition to the "control module."
 - c.) Replacing "determining part" on line 11 of claim 21 with --first determining part-- and "determining part" on line 16 of claim 21 with --second determining part-- is suggested.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 12-15, 20 and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Hwang et al. (US 2005/0265191). Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

In regard to claim 12, Hwang discloses an information recording medium (Fig. 1, element 4) comprising a volume space for recording user data (Fig. 2, “User Data Area”), a spare area containing a substitute area that can be used in place of a defective area contained in the volume space (Fig. 2, “Spare Area[s]”), and a defect management information area for recording defect management information used for managing the defective area (Fig. 2, “DMA[s]”), wherein the defect management information contains defect location information indicating a location of the defective area (Fig. 5, element 520) and defect status information indicating an attribute of the defect management information (Fig. 5, elements 510 and 530), and the attribute of the defect status information after, physical reformatting of the information recording medium indicates that significant user data is not present in any of the defective area and the substitute area (Paragraphs 0096, 0101, 0105 and 0107).

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In regard to claim 13, Hwang discloses a process (Fig. 16), for recording defect management information used for managing a defective area onto an information recording medium (Fig. 1, element 4), wherein the information recording medium includes a volume space for recording user data (Fig. 2, “User Data Area”), a spare area containing a substitute area that can be used in place of the defective area contained in the volume space (Fig. 2, “Spare Area[s]”), and a defect management information area for recording the defect management information (Fig. 2, “DMA[s]”), and the defect management information contains defect location information indicating a location of the defective area (Fig. 5, element 520) and defect status information indicating an attribute of the defect management information (Fig. 5, elements 510 and 530), the process comprising: recording the attribute of the defect status information indicating that significant user data is not present in any of the defective area and the substitute area as a result of physical reformatting of the information recording medium (Paragraphs 0096, 0101, 0105 and 0107).

In regard to claim 14, Hwang discloses an information recording device (Fig. 1) for recording information on an information recording medium (Fig. 1, element 4) including a volume space for recording user data (Fig. 2, “User Data Area”), a spare area containing a substitute area that can be used in place of a defective area contained in the volume space (Fig. 2, “Spare Area[s]”), and a defect management information area for recording defect management information used for managing the defective area (Fig. 2, “DMA[s]”), wherein the defect management information contains a DFL entry (Figs. 4 and 5) having defect location information indicating a location of the defective area (Fig. 5, element 520) and defect status information indicating an attribute of the defect management information (Fig. 5, elements 510 and 530), and

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an initialization processing module is provided (Fig. 1, element 10), which maintains at least the defect location information of the defect management information upon receiving an execution instruction of physical reformatting of the information recording medium and overwrites the defect status information with an attribute indicating that significant user data is not present in any of the defective area and the substitute area as a result of physical reformatting (Paragraphs 0096, 0101, 0105 and 0107).

In regard to claim 15, Hwang discloses the DFL entry of the defect management information further comprises substitute location information indicating a location of the substitute area (Fig. 5, element 540), and the initialization processing module erases the substitute location information in the DFL entry, upon receiving an execution instruction of physical reformatting of the information recording medium (Paragraph 0101).

In regard to claim 20, Hwang discloses an information reproducing device (Fig. 1) for reproducing information from an information recording medium (Fig. 1, element 4) including a volume space for recording user data (Fig. 2, "User Data Area"), a spare area containing a substitute area that can be used in place of a defective area contained in the volume space (Fig. 2, "Spare Area[s]"), and a defect management information area for recording defect management information used for managing the defective area (Fig. 2, "DMA[s]"), the defect management information containing a DFL entry (Figs. 4 and 5) having defect location information indicating a location of the defective area (Fig. 5, element 520) and defect status information indicating an attribute of the defect management information (Fig. 5, elements 510 and 530), the device comprising a control module (Fig. 1, element 10) for, upon receiving a reproducing instruction with respect to an area represented by the DFL entry in which the defect status information has

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the attribute indicating that significant user data is not present in any of the defective area and the substitute area as a result of physical reformatting (Paragraphs 0096, 0101, 0105 and 0107), performing reproduction processing, using generated dummy data (“null data” of Paragraph 0086) as user data in place of data present in the defective area and the substitute area (Paragraph 0086).

In regard to claim 21, Hwang discloses a drive device (Fig. 1) for performing at least one of recording processing and reproduction processing with respect to an information recording medium (Fig. 1, element 4) including a volume space for recording user data (Fig. 2, “User Data Area”), a spare area containing a substitute area that can be used in place of a defective area contained in the volume space (Fig. 2, “Spare Area[s]”), and a defect management information area for recording defect management information used for managing the defective area (Fig. 2, “DMA[s]”), the defect management information containing a DFL entry (Figs. 4 and 5) having defect location information indicating a location of the defective area (Fig. 5, element 520) and defect status information indicating an attribute of the defect management information (Fig. 5, elements 510 and 530), the device comprising: a determining part (Fig. 1, element 10) for, upon receiving a recording instruction or a reproduction instruction, determining whether or not an area requested for recording or reproduction is indicated by the DFL entry, and the attribute of the DFL entry indicates that significant user data is not present in any of the defective area and the substitute area as a result of physical reformatting (Paragraph 0086); and a determining part (Fig. 1, element 10) for determining a processing content based on a determination result of the determining part (Paragraph 0086).

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5. Claims 12-14 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Russell (US 6,327,679).

In regard to claim 12, Russell discloses an information recording medium (Fig. 2, element 206 and Fig. 5, “Disk”) comprising a volume space for recording user data (Fig. 5, “User Sectors”), a spare area containing a substitute area that can be used in place of a defective area contained in the volume space (Fig. 5, “Reserved Replacement Sectors”), and a defect management information area (Fig. 2, element 214) for recording defect management information used for managing the defective area (Col. 4¹), wherein the defect management information contains defect location information indicating a location of the defective area (Fig. 2, element 218) and defect status information indicating an attribute of the defect management information (Fig. 2, element 224), and the attribute of the defect status information after physical reformatting of the information recording medium indicates that significant user data is not present in any of the defective area and the substitute area (Col. 5, lines 3-13 and Col. 2, lines 22-27²).

In regard to claim 13, Russell discloses a process (Fig. 5), for recording defect management information (Fig. 2, element 214) used for managing a defective area onto an information recording medium (Fig. 2, element 206; Fig. 5, “Disk” and Col. 4³), wherein the information recording medium includes a volume space for recording user data (Fig. 5, “User

¹ Although Fig. 2 shows “defect map table 214 . . . maintained by . . . the operating system for host system 202,” the “defect map table 214” is additionally “maintained by storage media 204” or exclusively “maintained by storage media 204” (Col. 4, lines 4-7).

² After reformatting, clearing of unusable bit 224 indicates significant user data is not present in any of the defective area and the substitute area.

³ Although Fig. 2 shows “defect map table 214 . . . maintained by . . . the operating system for host system 202,” the “defect map table 214” is additionally “maintained by storage media 204” or exclusively “maintained by storage media 204” (Col. 4, lines 4-7).

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Sectors”), a spare area containing a substitute area that can be used in place of the defective area contained in the volume space (Fig. 5, “Reserved Replacement Sectors”), and a defect management information area for recording the defect management information (Fig. 2, element 214), and the defect management information contains defect location information indicating a location of the defective area (Fig. 2, element 218) and defect status information indicating an attribute of the defect management information (Fig. 2, element 224), the process comprising: recording the attribute of the defect status information indicating that significant user data is not present in any of the defective area and the substitute area as a result of physical reformatting of the information recording medium (Col. 5, lines 3-13 and Col. 2, lines 22-27⁴).

In regard to claim 14, Russell discloses an information recording device (Fig. 2) for recording information on an information recording medium (Fig. 2, element 206 and Fig. 5, “Disk”) including a volume space for recording user data (Fig. 5, “User Sectors”), a spare area containing a substitute area that can be used in place of a defective area contained in the volume space (Fig. 5, “Reserved Replacement Sectors”), and a defect management information area (Fig. 2, element 214) for recording defect management information used for managing the defective area (Col. 4⁵), wherein the defect management information contains a DFL entry (Fig. 2, element 216) having defect location information indicating a location of the defective area (Fig. 2, element 218) and defect status information indicating an attribute of the defect management information (Fig. 2, element 224), and an initialization processing module is provided (inherent

⁴ After reformatting, clearing of unusable bit 224 indicates significant user data is not present in any of the defective area and the substitute area.

⁵ Although Fig. 2 shows “defect map table 214 . . . maintained by . . . the operating system for host system 202,” the “defect map table 214” is additionally “maintained by storage media 204” or exclusively “maintained by storage media 204” (Col. 4, lines 4-7).

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to perform the “reformat” of Col. 2, line 23 and “format[ing]” of Col. 5, line 5), which maintains at least the defect location in formation of the defect management information upon receiving an execution instruction of physical reformatting of the information recording medium and overwrites the defect status information with an attribute indicating that significant user data is not present in any of the defective area and the substitute area as a result of physical reformatting (Col. 5, lines 3-13 and Col. 2, lines 22-27⁶).

In regard to claim 21, Russell discloses an drive device (Fig. 2) for performing at least one of recording processing and reproduction processing (Fig. 4) with respect to an information recording medium (Fig. 2, element 206 and Fig. 5, “Disk”) including a volume space for recording user data (Fig. 5, “User Sectors”), a spare area containing a substitute area that can be used in place of a defective area contained in the volume space (Fig. 5, “Reserved Replacement Sectors”), and a defect management information area (Fig. 2, element 214) for recording defect management information used for managing the defective area (Col. 4⁷), the defect management information containing a DFL entry (Fig. 2, element 216) having defect location information indicating a location of the defective area (Fig. 2, element 218) and defect status information indicating an attribute of the defect management information (Fig. 2, element 224), the device comprising: a determining part (Fig. 2, element 228) for, upon receiving a recording instruction or a reproduction instruction, determining whether or not an area requested for recording or reproduction is indicated by the DFL entry (Fig. 4A, element 404 and Fig. 4B, element 422), and

⁶ After reformatting, clearing of unusable bit 224 indicates significant user data is not present in any of the defective area and the substitute area.

⁷ Although Fig. 2 shows “defect map table 214 . . . maintained by . . . the operating system for host system 202,” the “defect map table 214” is additionally “maintained by storage media 204” or exclusively “maintained by storage media 204” (Col. 4, lines 4-7).

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the attribute of the DFL entry indicates that significant user data is not present in any of the defective area and the substitute area as a result of physical reformatting (Col. 5, lines 3-13 and Col. 2, lines 22-27⁸; and Fig. 4A, element 406 and Fig. 4B, element 424); and a determining part (Fig. 2, element 228) for determining a processing content based on a determination result of the determining part (Fig. 4A, steps 408 and 410 and Fig. 4B, steps 426 and 428).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Russell in view of Kulakowski et al. (hereinafter Kulakowski) (US 5,303,219).

Russell discloses the device of claim 14 but does not disclose that the device further comprises an inspection processing module for inspecting the defective area indicated by the DFL entry having an attribute indicating that physical reformatting has been performed while there is no operation instruction from a higher-level control device and invalidating the DFL entry if defects in the defective area have been eliminated and allocating a substitute area to the defective area if a defect in the defective area is confirmed.

Kulakowski discloses an inspection processing module (Fig. 1) for inspecting a defective area indicated by a DFL entry while there is no operation instruction from a higher-level control

⁸ After reformatting, clearing of unusable bit 224 indicates significant user data is not present in any of the defective area and the substitute area.

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device and invalidating the DFL entry if defects in the defective area have been eliminated and allocating a substitute area to the defective area if a defect in the defective area is confirmed (Figs. 9C and 9D).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to for the device of Russell to comprise an inspection processing module for inspecting the defective area of Russell indicated by the DFL entry of Russell, which have an attribute indicating that physical reformatting has been performed, while there is no operation instruction from a higher-level control device and invalidating the DFL entry if defects in the defective area have been eliminated and allocating a substitute area to the defective area if a defect in the defective area is confirmed as suggested by Kulakowski, the motivation being to reclaim as usable areas defective areas that are no longer defective.

Allowable Subject Matter

7. Claims 17-19 would be allowable if rewritten or amended to overcome the objection set forth in this Office action. None of the references of record alone or in combination suggest or fairly teach an information recording device for recording information on an information recording medium including a sector that is a minimum unit in a case where a higher-level device records/reproduces user data, a cluster containing a plurality of the sectors, which is an error correction unit, and the plurality of the clusters, and including a volume space for recording user data, a spare area containing a substitute area that can be used in place of a defective area contained in the volume space, and a defect management information area for recording defect management information used for managing the defective area, wherein the defect management information contains a DFL entry having defect location information indicating a location of the

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cluster contained in the defective area and defect status information indicating an attribute of the defect management information, the device further comprising a **control module for, upon receiving a recording instruction with respect to at least one sector contained in a cluster represented by the DFL entry in which the defect status information has the attribute indicating that significant user data is not present in any of the defective area and the substitute area as a result of physical reformatting, performing recording processing of new user data with respect to the defective area and the substitute area, using dummy data, without using data present in the defective area and the substitute area.**

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sasaki et al. (US 6,189,118) indicates defect status attribute information which indicates whether the defective area is a defective area with no data recorded (Fig. 19). Ko et al. (US 2002/0007472) discloses that, during re-initialization, the SDL is cleared (Paragraphs 0015 and 0057-0060).

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael V. Battaglia whose telephone number is (571) 272-7568. The examiner can normally be reached on M-F, 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, A. Wellington can be reached on (571) 272-4483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael V. Battaglia/
Primary Examiner, Art Unit 2627